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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,598	04/30/2002	Kenichi Miyoshi	L9289.02104	6485

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EXAMINER

BARNIE, REXFORD N

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/031,598	Applicant(s) MIYOSHI, KENICHI	
	Examiner REXFORD N BARNIE	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

R. Barnie
REXFORD BARNIE
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/06/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0924 876 A2 in view of Boros (US Pat# 6,615,024) or Wan et al. (US Pat# 5,621,769).

Regarding claim 1, EP '876 A2 teaches a wireless communication system comprising of a measurement unit (110) which estimates deterioration of channel quality, a weight controller and a transmission/reception means but fails to teach that weights can be adjusted to a signal before hard decision (demodulation) is done, even though likely based on figs.

Wan et al. teaches an adaptive sequence estimation apparatus employing diversity combining/selection comprising of a channel estimator, power estimation circuit, switches and a weight and accumulation circuit wherein the circuit analyses signals and adjusts them with a weighting factor in (see figs. Including fig. 5) before a decision is performed.

Boros teaches a method and apparatus for determining signatures in (see figs. 1, 4, col. 18) wherein an estimation or measurement can be done on a received signal and

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them adjusted using a weight control means based on the estimation without going through a hard decision (demodulator).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Wan or Boros into that of EP '876 thus making it possible to reduce distortion and enhancing quality of signal based on the processing system taught by the combination.

Regarding claim 2, The combination including Wan and EP teaches using switching means in conjunction with the weight control means.

Regarding claim 3, the combination including Boros et al. adjusted signal (pre-decision and post-decision) in (see fig. 4).

Regarding claim 4, The combination teaches weight means factors/parameters associated with pre and post decision signals in (see figs 1, 4 of Boros and fig. 2 Of Wan et al.).

Regarding claim 5, The combination including Wan teaches a power estimation circuit.

Regarding claim 6, EP '876 A2 teaches a wireless communication system comprising of a measurement unit (110) which estimates deterioration of channel quality, a weight controller and a transmission/reception means but fails to teach that weights can be adjusted to a signal before hard decision (demodulation) is done.

Wan et al. teaches an adaptive sequence estimation apparatus employing diversity combining/selection comprising of a channel estimator, power estimation circuit, switches and a weight and accu circuit wherein the circuit analyses signals and

adjusts them with a weighting factor in (see figs. Including fig. 5) before a decision is performed.

Boros teaches a method and apparatus for determining signatures in (see figs. 1, 4, col. 18) wherein an estimation or measurement can be done on a received signal and them adjusted using a weight control means based on the estimation without going through a hard decision (demodulator).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Wan or Boros into that of EP '876 thus making it possible to reduce distortion and enhancing quality of signal based on the processing system taught by the combination.

Regarding claim 7, EP '876 A2 teaches a wireless communication system comprising of a measurement unit (110) which estimates deterioration of channel quality, a weight controller and a transmission/reception means but fails to teach that weights can be adjusted to a signal before hard decision (demodulation) is done.

Wan et al. teaches an adaptive sequence estimation apparatus employing diversity combining/selection comprising of a channel estimator, power estimation circuit, switches and a weight and accu circuit wherein the circuit analyses signals and adjusts them with a weighting factor in (see figs. Including fig. 5) before a decision is performed.

Boros teaches a method and apparatus for determining signatures in (see figs. 1, 4, col. 18) wherein an estimation or measurement can be done on a received signal and

them adjusted using a weight control means based on the estimation without going through a hard decision (demodulator).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Wan or Boros into that of EP '876 thus making it possible to reduce distortion and enhancing quality of signal based on the processing system taught by the combination.

Regarding claim 8, EP '876 A2 teaches a wireless communication system comprising of a measurement unit (110), which estimates deterioration of channel quality, a weight controller and a transmission/reception means. Furthermore, EP '876 teaches a multiplier and an adder but fails to teach definitely that weights can be adjusted to a signal before hard decision (demodulation) is done.

Wan et al. teaches an adaptive sequence estimation apparatus employing diversity combining/selection comprising of a channel estimator, power estimation circuit, switches and a weight and accu circuit wherein the circuit analyses signals and adjusts them with a weighting factor in (see figs. Including fig. 5) before a decision is performed.

Boros teaches a method and apparatus for determining signatures in (see figs. 1, 4, col. 18) wherein an estimation or measurement can be done on a received signal and them adjusted using a weight control means based on the estimation without going through a hard decision (demodulator).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Wan or Boros into that of EP

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'876 thus making it possible to reduce distortion and enhancing quality of signal based on the processing system taught by the combination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **REXFORD N BARNIE** whose telephone number is (703)306-2744. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRIMARY EXAMINER
REXFORD BARNIE
09/06/04

R/Barnie
REXFORD BARNIE
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